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(71) Applicant(s)
Mark Robert Stolkin
14 Egerton Gardens Mews, LONDON,
SW3 2EH, United Kingdom

(72) Inventor(s)
Mark Robert Stolkin

(74) Agent and/or Address for Service
FJ Cleveland
40-43 Chancery Lane, LONDON,
WC2A 1JQ, United Kingdom

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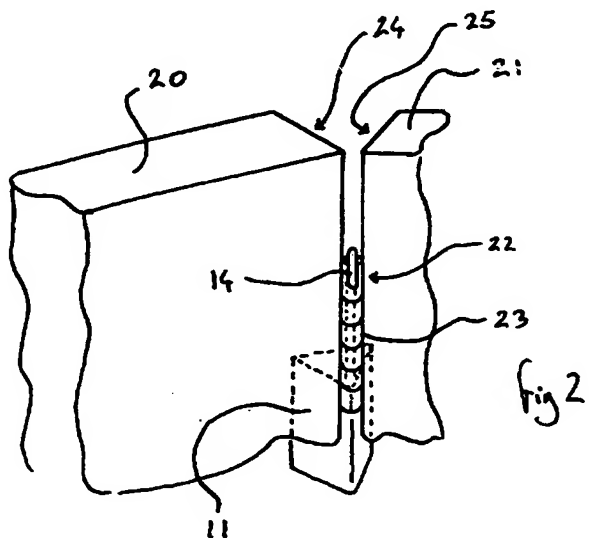
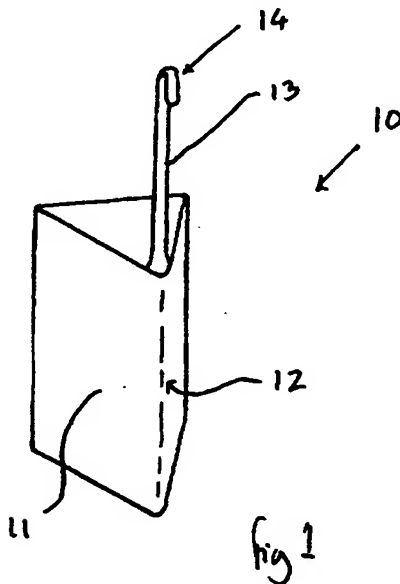
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E2X X1

(56) Documents Cited
GB 0398447 A WO 1995/023905 A1
WO 1986/002691 A1 US 5511837 A

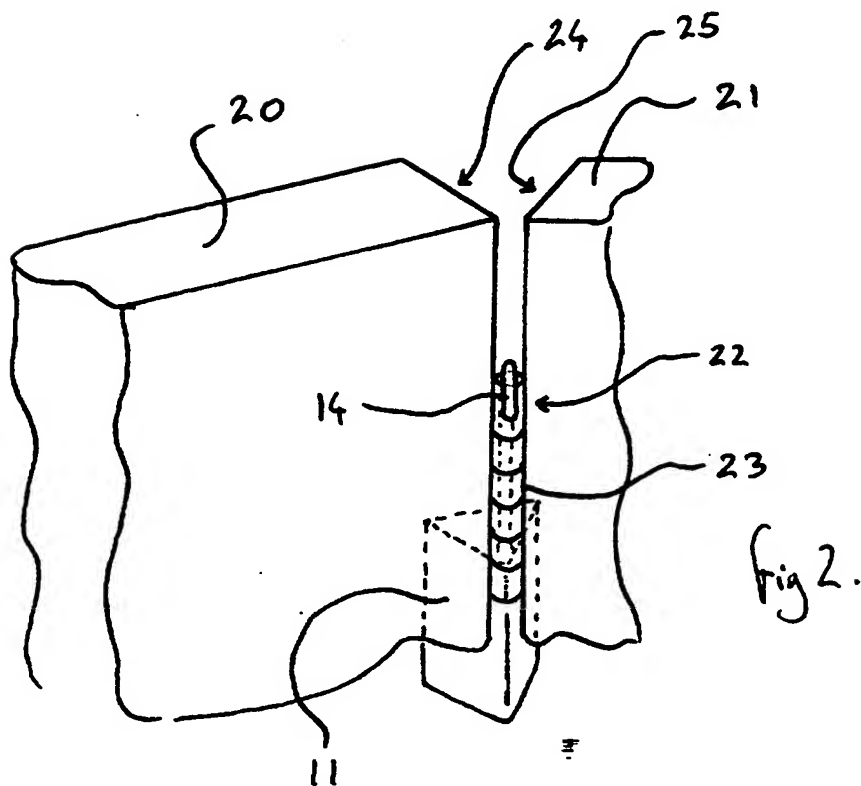
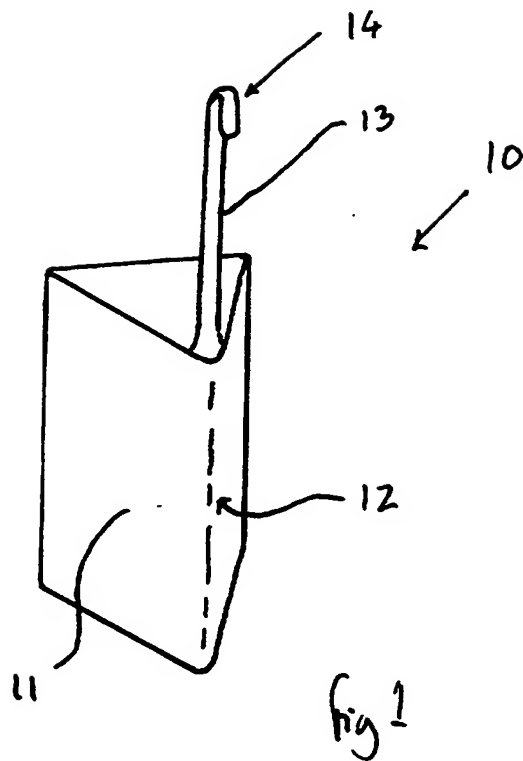
(58) Field of Search
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(54) Abstract Title
Doorstop

(57) A doorstop (10) comprising at least one spacer member (11) and a means (13) to attach the member to a hinge (23). Preferably each spacer member is wedge shaped and made from rubber. The wedge shapes may be provided in different sizes and the doorstop may include two opposing wedges. In use, a wedge is located between a door (20) and a frame (21) to restrict movement in the door closing direction. A second wedge is included to restrict movement in the door opening direction.



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Door Stop

The present invention relates to the field of stops for keeping doors open, or partially open.

5 Known door stops include wedges and weights. A wedge is manually jammed between a lower edge of a door and the a floor over which the door swings. The wedge is typically formed of a resilient synthetic rubber material which permits jamming of the door without damaging the jammed edge of the door or scratching the floor surface. Weights are simply heavy objects placed on a floor surface to block swinging of the door. Often they are decorative castings made
10 for example from cast iron or another cheap, massive material.

One problem which the present inventor has identified is that of trapping of children's fingers in the space between the hinged edge of the door and a door frame in which the door is hung. Children are capable of removing door stops and playing with doors. Occasionally they may
15 insert their fingers into the hinged space. A draft or slight push of the door can cause the door to swing, and because of the large mechanical advantage exerted, the hinged edge of the door closing on the door frame can crush the fingers located therebetween.

An object of the present invention is to provide a door stop which renders the door child proof
20 in that, once fitted, the door stop prevents the door from closing and crushing fingers. The door stop must also be inaccessible to children so that the stop cannot easily be removed by an interfering child.

According to one aspect of the present invention there is provided a door stop comprising a
25 spacer member and means for attaching the spacer member to a door hinge, the spacer member in use restricting or preventing free swinging of the door by occupying space through which a hinged door would have to swing.

Preferably the spacer member occupies an arcuate region between the door inner hinged edge
30 and an inner surface of the door frame. This prevents door closure. However, if it is desired to prevent full opening of a door, the spacer may be placed outside the hinge region in the space occupied by the door as it opens.

By attaching the spacer member to an upper hinge of the door, the doorstop may be located away from tampering, and largely out of sight. Children are therefore less likely to tamper with the door stop. In addition, because the spacer member is accommodated between the hinged door edge and the frame, the stopping effect is extremely good because loading of the stopper under a door-closing (or door opening in the alternative position) force cannot dislodge the stopper.

In a preferred arrangement the spacer member has a generally wedge-like configuration which can occupy a wedge section gap between the hinged door edge and the door frame inside surface. The wedge may be triangular or arcuate in section.

The spacer member may be formed at least in part from a resilient natural or synthetic rubber material.

The means for attaching may comprise a hook for suspending the spacer member from a hinge of the door to be stopped. Preferably, the means for attaching comprises a hook extending from a leading edge of the wedge configuration spacer member. The spacer member and hook may be an integral single moulding.

According to another aspect of the invention there is provided a door stop comprising two spacer members as hereinbefore described, and means for attaching the spacer members to a door hinge, wherein the spacer members are configured so that in use, one spacer member is located on one side of the hinge and the other spacer member is located on the other side of the hinge, whereby swinging of the door is restricted in both directions.

This doorstop may have a "butterfly" configuration comprising two facing wedges which serve as the spacer members.

According to another aspect of the invention there is provided a packaged plurality of door stops as hereinbefore, each door stop having a spacer member providing a different spacing effect one compared with the others in the plurality.

According to another aspect of the present invention there is provided a hinged door and door frame combination provided with a doorstop as hereinbefore described.

In the drawings figure 1 is a perspective view of a doorstep according to the present invention.

Figure two shows the door stop of figure 1 in situ in a door/door frame.

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Following is a description by way of example only and with reference to the drawings of one way of putting the present invention into effect.

Door stop 10 comprises a wedge configuration spacer member 11. Spacer member 11 has a
10 triangular section. A leading edge 12 of the wedge is provided at one end thereof with a hook
arm 13. The arm has an orientation which is co-directional with the line of the leading edge. A
hook portion 14 of the arm is curved around to point generally in a return direction, through a
plane which is a continuation of the direction of tapering of the wedge.

15 The door stop 10 is formed from a moulding of synthetic rubber, loaded with incompressible
filler material which increases the stiffness of the spacer member and resistance to deformation
under loading.

Figure 2 shows the door stop in use between a door 20 and a frame portion 21. The hook is
20 shown engaged with an upper end region 22 of an upper hinge 23 of two hinges (lower not
shown) which attach the door to the frame. The spacer member occupies the space between an
inner edge 24 of the door and an inner surface 25 of the frame. The spacer member prevents the
door closing substantially beyond the arc represented by the section of the spacer member. It
will be evident that the stopper could be placed on the other side of the hinge, thereby to
25 prevent full opening of the door.

Unlike conventional door stops, the stop of the present invention cannot be accidentally
dislodged.

Claims

1. A door stop comprising a spacer member and means for attaching the spacer member to a door hinge, the spacer member in use preventing or restricting free swinging of the door by occupying space through which the door would have to swing in order to open or close as the case may be.
2. A door stop as claimed in claim 1 wherein the spacer member has a generally wedge-like configuration.
3. A door stop as claimed in claim 1 or claim 2 wherein the spacer member is formed at least in part from a resilient natural or synthetic rubber material.
4. A door stop as claimed in any preceding claim wherein the means for attaching comprises a hook for suspending the spacer member from a hinge of the door to be stopped.
5. A door stop as claimed in claim 2 wherein the spacer member has a generally wedge-like configuration and the means for attaching comprises a hook extending from a leading edge of the wedge configuration spacer member.
6. A packaged plurality of door stops according to any preceding claim, each door stop having a spacer member providing a different spacing effect one compared with the others in the plurality.
7. A door stop as claimed in any of claims 1 to 5 wherein there are two spacer members wherein the spacer members are configured so that in use, one spacer member is located on one side of the hinge and the other spacer member is located on the other side of the hinge, whereby swinging of the door is restricted or prevented in both swinging directions.
8. A door stop as claimed in claim 7 wherein the spacer members together have a "butterfly" configuration comprising two facing wedges.

9. A hinged door and frame combination provided with a doorstep as claimed in any of claims 1 to 5.
10. A door stop substantially as hereinbefore described with reference to the drawings.



INVESTOR IN PEOPLE

Application No: GB 0127353.1
Claims searched: 1-10

Examiner: Joanne Pullen
Date of search: 10 April 2002

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): E2X X1

Int Cl (Ed.7): E05C, E05F.

Other: Online: EPODOC, WPI, JAPIO.

Documents considered to be relevant:

| Category | Identity of document and relevant passage | Relevant to claims |
|----------|--|--------------------|
| X | GB 398447 A (WIELAND) Figures and claim 1, see rubber buffer (1) and hook (2). | 1, 3, 4 & 9 |
| X | WO 95/23905 A1 (ANDERSSON et al) Figures, page 2 lines 4-8 and page 4 lines 18-20. | 1-5 & 9 |
| X | WO 86/02691 A1 (STRANDLUND) Figures, see 'butterfly' configured spacers 6 and 6'. | 1 & 7-9 |
| X | US 5511837 A (DEMPSEY et al) Figures. | 1, 2, 4 & 9 |

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

DERWENT-ACC-NO: 2003-405868

DERWENT-WEEK: 200339

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TITLE: Door stop has at least one spacer member and device to attach member to hinge, where each spacer member is wedge shaped and made from rubber

INVENTOR: STOLKIN, M R

PATENT-ASSIGNEE: STOLKIN M R[STOLI]

PRIORITY-DATA: 2001GB-0027353 (November 14, 2001)

PATENT-FAMILY:

| PUB-NO | PUB-DATE | LANGUAGE | PAGES | MAIN-IPC |
|---------------------|---------------------|-----------------|--------------|--------------------|
| GB 2382105 A | May 21, 2003 | N/A | 008 | E05C 017/54 |

APPLICATION-DATA:

| PUB-NO | APPL-DESCRIPTOR | APPL-NO | APPL-DATE |
|--------------------|------------------------|-----------------------|--------------------------|
| GB 2382105A | N/A | 2001GB-0027353 | November 14, 2001 |

INT-CL (IPC): E05C017/54

ABSTRACTED-PUB-NO: GB 2382105A

BASIC-ABSTRACT:

NOVELTY - The door stop has at least one spacer member (11) and a device to attach the member to a hinge (23). Each spacer member is wedge shaped and made

from rubber. The wedge shapes may be provided in different sizes and the door stop may include two opposing wedges. A wedge is located between a door (20) and a frame (21) to restrict movement in the door closing direction. A second wedge is included to restrict movement in the door opening direction.

USE - For holding a door open.

ADVANTAGE - The door stop is child proof, and crushing of fingers is prevented.

DESCRIPTION OF DRAWING(S) - The drawings show a perspective view of the door stop, and the door stop in situ in a door/door frame, respectively.

Spacer member 11

Door 20

Door frame 21

Hinge 23

CHOSEN-DRAWING: Dwg.1,2/2

**TITLE-TERMS: DOOR STOP ONE SPACE MEMBER DEVICE ATTACH MEMBER
HINGE SPACE MEMBER
WEDGE SHAPE MADE RUBBER**

DERWENT-CLASS: Q47

SECONDARY-ACC-NO:

Non-CPI Secondary Accession Numbers: N2003-323759